

# SEQUENCE LISTING

<110> Rosen, Craig A.  
Haseltine, William A.

<120> Albumin Fusion Proteins

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<140> Unassigned

<141> 2001-04-12

<150> 60/229,358

<151> 2000-04-12

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<151> 2000-12-21

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Ile Ser Ala Asp Ala His Lys Ser  
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Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln  
20 25 30  
cag tgt cca ttt gaa gat cat gta aaa tta gtg aat gaa gta act gaa 144  
Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45  
ttt gca aaa aca tgt gtt gct gat gag tca gct gaa aat tgt gac aaa 192  
Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60  
tca ctt cat acc ctt ttt gga gac aaa tta tgc aca gtt gca act ctt 240  
Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80  
cgt gaa acc tat ggt gaa atg gct gac tgc tgt gca aaa caa gaa cct 288  
Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95  
gag aga aat gaa tgc ttc ttg caa cac aaa gat gac aac cca aac ctc 336  
Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
100 105 110  
ccc cga ttg gtg aga cca gag gtt gat gtg atg tgc act gct ttt cat 384  
Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
115 120 125

gac aat gaa gag aca ttt ttg aaa aaa tac tta tat gaa att gcc aga	432
Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg	
130 135 140	
aga cat cct tac ttt tat gcc ccg gaa ctc ctt ttc ttt gct aaa agg	480
Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg	
145 150 155 160	
tat aaa gct gct ttt aca gaa tgt tgc caa gct gct gat aaa gct gcc	528
Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala	
165 170 175	
tgc ctg ttg cca aag ctc gat gaa ctt cgg gat gaa ggg aag gct tcg	576
Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser	
180 185 190	
tct gcc aaa cag aga ctc aaa tgt gcc agt ctc caa aaa ttt gga gaa	624
Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu	
195 200 205	
aga gct ttc aaa gca tgg gca gtg gct cgc ctg agc cag aga ttt ccc	672
Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro	
210 215 220	
aaa gct gag ttt gca gaa gtt tcc aag tta gtg aca gat ctt acc aaa	720
Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys	
225 230 235 240	
gtc cac acg gaa tgc tgc cat gga gat ctg ctt gaa tgt gct gat gac	768
Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp	
245 250 255	
agg gcg gac ctt gcc aag tat atc tgt gaa aat cag gat tcg atc tcc	816
Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser	
260 265 270	
agt aaa ctg aag gaa tgc tgt gaa aaa cct ctg ttg gaa aaa tcc cac	864
Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His	
275 280 285	
tgc att gcc gaa gtg gaa aat gat gag atg cct gct gac ttg cct tca	912
Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser	
290 295 300	
tta gct gct gat ttt gtt gaa agt aag gat gtt tgc aaa aac tat gct	960
Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala	
305 310 315 320	
gag gca aag gat gtc ttc ctg ggc atg ttt ttg tat gaa tat gca aga	1008
Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg	
325 330 335	
agg cat cct gat tac tct gtc gtg ctg ctg ctg aga ctt gcc aag aca	1056
Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr	
340 345 350	
tat gaa acc act cta gag aag tgc tgt gcc gct gca gat cct cat gaa	1104
Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu	
355 360 365	

tgc tat gcc aaa gtg ttc gat gaa ttt aaa cct ctt gtg gaa gag cct	1152
Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro	
370 375 380	
cag aat tta atc aaa caa aac tgt gag ctt ttt gag cag ctt gga gag	1200
Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu	
385 390 395 400	
tac aaa ttc cag aat gcg cta tta gtt cgt tac acc aag aaa gta ccc	1248
Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro	
405 410 415	
caa gtg tca act cca act ctt gta gag gtc tca aga aac cta gga aaa	1296
Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys	
420 425 430	
gtg ggc agc aaa tgt tgt aaa cat cct gaa gca aaa aga atg ccc tgt	1344
Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys	
435 440 445	
gca gaa gac tat cta tcc gtg gtc ctg aac cag tta tgt gtg ttg cat	1392
Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His	
450 455 460	
gag aaa acg cca gta agt gac aga gtc aca aaa tgc tgc aca gag tcc	1440
Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser	
465 470 475 480	
ttg gtg aac agg cga cca tgc ttt tca gct ctg gaa gtc gat gaa aca	1488
Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr	
485 490 495	
tac gtt ccc aaa gag ttt aat gct gaa aca ttc acc ttc cat gca gat	1536
Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp	
500 505 510	
ata tgc aca ctt tct gag aag gag aga caa atc aag aaa caa act gca	1584
Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala	
515 520 525	
ctt gtt gag ctt gtg aaa cac aag ccc aag gca aca aaa gag caa ctg	1632
Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu	
530 535 540	
aaa gct gtt atg gat gat ttc gca gct ttt gta gag aag tgc tgc aag	1680
Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys	
545 550 555 560	
gct gac gat aag gag acc tgc ttt gcc gag gag ggt aaa aaa ctt gtt	1728
Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val	
565 570 575	
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Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
 35          40          45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
 50          55          60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
 65          70          75          80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
 85          90          95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
100          105          110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
115          120          125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
130          135          140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
145          150          155          160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
165          170          175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
180          185          190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu
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Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro
210          215          220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys
225          230          235          240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
245          250          255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser
260          265          270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His
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Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser
290          295          300
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Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
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 Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
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 Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
 340 345 350  
 Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365  
 Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
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 Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415  
 Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
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 435 440 445  
 Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
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 Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
 465 470 475 480  
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 485 490 495  
 Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 500 505 510  
 Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525  
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 Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
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<220>  
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<220>  
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<220>  
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<400> 28  
 ctttaaatacg atgagcaacc tcactcttgt gtgcatcnnn nnnnnnnnnn nn

52

<210> 29  
 <211> 24  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> signal  
 <223> signal peptide of natural human serum albumin protein

<400> 29  
 Met Lys Trp Val Ser Phe Ile Ser Leu Leu Phe Leu Phe Ser Ser Ala  
     1                    5                    10                    15  
 Tyr Ser Arg Ser Leu Asp Lys Arg  
                     20

<210> 30  
 <211> 114  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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 <223> forward primer useful for generation of PC4:HSA  
 albumin fusion VECTOR

<220>  
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 <222> (5)..(10)  
 <223> BamHI restriction site

<220>  
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 <222> (11)..(16)  
 <223> Hind III restriction site

<220>  
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 <222> (17)..(27)  
 <223> Kozak sequence

<220>  
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 <222> (25)..(97)  
 <223> cds natural signal sequence of human serum albumin

<220>  
 <221> misc\_feature  
 <222> (75)..(81)  
 <223> XhoI restriction site

<220>  
 <221> misc\_feature  
 <222> (98)..(114)  
 <223> cds first six amino acids of human serum albumin

<400> 30  
 tcagggatcc aagcttccgc caccatgaag tgggtaacct ttatttcctc tctttttctc 60  
 tttagctcgg ctactcgag ggggtgtgtt cgtcgagatg cacacaagag tgag 114

<210> 31  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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 <223> reverse primer useful for generation of  
 PC4:HSA albumin fusion VECTOR

<220>  
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 <222> (6)..(11)  
 <223> Asp718 restriction site

<220>  
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 <222> (12)..(17)  
 <223> EcoRI restriction site

<220>  
 <221> misc\_feature  
 <222> (15)..(17)  
 <223> reverse complement of stop codon

<220>  
 <221> misc\_feature  
 <222> (18)..(25)  
 <223> AscI restriction site

<220>  
 <221> misc\_feature  
 <222> (18)..(43)  
 <223> reverse complement of DNA sequence encoding last 9 amino acids

<400> 31  
 gcagcggtag cgaattcggc ggccttata agcctaaggc agc 43

<210> 32

<211> 46  
 <212> DNA  
 <213> Artificial Sequence  
  
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 protein into pC4:HSA vector  
  
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<220>  
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<400> 32  
ccgccgctcg aggggtgtgt ttctcgann nnnnnnnnnn nnnnnn

46

<210> 33  
<211> 55  
<212> DNA  
<213> Artificial Sequence

<220>  
<221> primer\_bind  
<223> reverse primer useful for inserting Therapeutic  
protein into pC4:HSA vector

<220>  
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<220>  
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<222> (39)

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<223> n equals a,t,g, or c

<220>
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<220>
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<220>
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<223> n equals a,t,g, or c

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<222> (53)

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<220>

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<222> (54)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (55)

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<400> 33

agtcccatcg atgagcaacc tcaactcttgt gtgcacnncn nnnnnnnnnnn nnnnnn 55

<210> 34

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<221> signal

<223> Stanniocalcin signal peptide

<400> 34

Met Leu Gln Asn Ser Ala Val Leu Leu Leu Val Ile Ser Ala Ser  
1 5 10 15

Ala

<210> 35

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<221> signal

<223> Synthetic signal peptide

<400> 35

Met Pro Thr Trp Ala Trp Trp Leu Phe Leu Val Leu Leu Leu Ala Leu  
1 5 10 15

Trp Ala Pro Ala Arg Gly  
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<210> 36

<211> 23

<212> DNA

<213> Artificial Sequence

<220>  
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 <223>Degenerate VH forward primer useful for  
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<400> 36  
 caggtgcagc tgggtgcagtc tgg 23

<210> 37  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <221>primer\_bind  
 <223>Degenerate VH forward primer useful for  
 amplifying human VH domains

<400> 37  
 caggtcaact taagggagtc tgg 23

<210> 38  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <221>primer\_bind  
 <223>Degenerate VH forward primer useful for  
 amplifying human VH domains

<400> 38  
 gaggtgcagc tgggtggagtc tgg 23

<210> 39  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <221>primer\_bind  
 <223>Degenerate VH forward primer useful for  
 amplifying human VH domains

<400> 39  
 caggtgcagc tgcaggagtc ggg 23

<210> 40  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <221>primer\_bind  
 <223>Degenerate VH forward primer useful for  
 amplifying human VH domains

<400> 40  
gaggtgcagc tgttgcagtc tgc 23

<210> 41  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate VH forward primer useful for  
amplifying human VH domains

<400> 41  
caggtacagc tgcagcagtc agg 23

<210> 42  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate JH reverse primer useful for  
amplifying human VH domains

<400> 42  
tgaggagacg gtgaccaggg tgcc 24

<210> 43  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate JH reverse primer useful for  
amplifying human VH domains

<400> 43  
tgaagagacg gtgaccattg tccc 24

<210> 44  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
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amplifying human VH domains

<400> 44  
tgaggagacg gtgaccaggg ttcc 24

<210> 45  
<211> 24  
<212> DNA  
<213> Artificial Sequence



<220>  
 <221>primer\_bind  
 <223>Degenerate JH reverse primer useful for  
 amplifying human VH domains  
  
 <400> 45  
 tgaggagacg gtgaccgtgg tccc  
  
 <210> 46  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <221>primer\_bind  
 <223>Degenerate Vkappa forward primer useful for  
 amplifying human VL domains  
  
 <400> 46  
 gacatccaga tgacccagtc tcc  
  
 <210> 47  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <221>primer\_bind  
 <223>Degenerate Vkappa forward primer useful for  
 amplifying human VL domains  
  
 <400> 47  
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 <210> 48  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <221>primer\_bind  
 <223>Degenerate Vkappa forward primer useful for  
 amplifying human VL domains  
  
 <400> 48  
 gatattgtga tgactcagtc tcc  
  
 <210> 49  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <221>primer\_bind  
 <223>Degenerate Vkappa forward primer useful for  
 amplifying human VL domains  
  
 <400> 49  
 gaaattgtgt tgacgcagtc tcc

24

23

23

23

23

<210> 50  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate Vkappa forward primer useful for  
amplifying human VL domains

<400> 50  
gacatcgtga tgacccagtc tcc 23

<210> 51  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
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<400> 51  
gaaacgacac tcacgcagtc tcc 23

<210> 52  
<211> 23  
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<220>  
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amplifying human VL domains

<400> 52  
gaaattgtgc tgactcagtc tcc 23

<210> 53  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate Vlambda forward primer useful for  
amplifying human VL domains

<400> 53  
cagtctgtgt tgacgcagcc gcc 23

<210> 54  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind

<223>Degenerate Vlambda forward primer useful for  
amplifying human VL domains

<400> 54

cagtctgccc tgactcagcc tgc

23

<210> 55

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

<223>Degenerate Vlambda forward primer useful for  
amplifying human VL domains

<400> 55

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23

<210> 56

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

<223>Degenerate Vlambda forward primer useful for  
amplifying human VL domains

<400> 56

tcttctgagc tgactcagga ccc

23

<210> 57

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

<223>Degenerate Vlambda forward primer useful for  
amplifying human VL domains

<400> 57

cacgttatac tgactcaacc gcc

23

<210> 58

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

<223>Degenerate Vlambda forward primer useful for  
amplifying human VL domains

<400> 58

caggctgtgc tcaactcagcc gtc

23

<210> 59

<211> 23

<212> DNA  
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 <400> 59  
 aattttatgc tgactcagcc cca

23

<210> 60  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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<400> 60  
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24

<210> 61  
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<220>  
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 amplifying human VL domains

<400> 61  
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24

<210> 62  
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 <212> DNA  
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<220>  
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 amplifying human VL domains

<400> 62  
 acgtttgata tccactttgg tccc

24

<210> 63  
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 <212> DNA  
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<220>  
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 amplifying human VL domains

<400> 63  
acgtttgatc tccaccttgg tccc 24

<210> 64  
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<220>  
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amplifying human VL domains

<400> 64  
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<210> 65  
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<220>  
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amplifying human VL domains

<400> 65  
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<210> 66  
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<212> DNA  
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<220>  
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<400> 66  
cagtctgccc tgactcagcc tgc 23

<210> 67  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate Jlambda reverse primer useful for  
amplifying human VL domains

<400> 67  
tcctatgtgc tgactcagcc acc 23

<210> 68  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
 <221>primer\_bind  
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<400> 68  
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<210> 69  
 <211> 23  
 <212> DNA  
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<220>  
 <221>primer\_bind  
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<400> 69  
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<210> 70  
 <211> 23  
 <212> DNA  
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<220>  
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<400> 70  
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<210> 71  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <221>primer\_bind  
 <223>Degenerate Jlambda reverse primer useful for  
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<400> 71  
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<210> 72  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221>turn  
 <223>Linker peptide that may be used to join VH  
 and VL domains in an scFv.

<400> 72  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 1 5 10 15